Designing A Distance Learning Solutions With QuickTime

Session 706

Designing A Distance Learning Solutions With QuickTime

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Designing A Distance Learning Solutions With QuickTime

Steve Bannerman
CEO, Caststream, Inc.

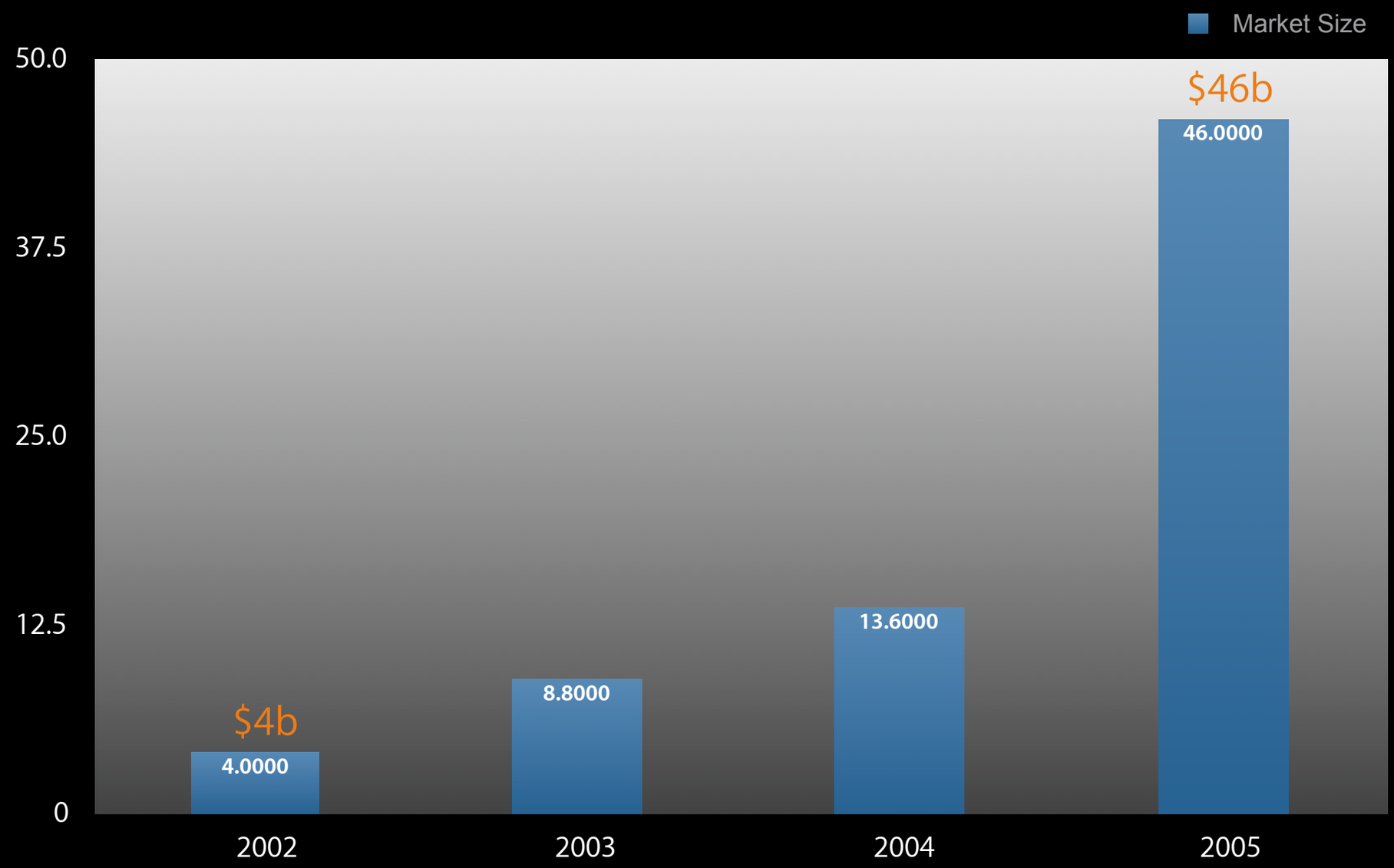
Chris Kawalek
CTO, Caststream, Inc.

Dr. Steven Erde
Cornell University

What We'll Talk About

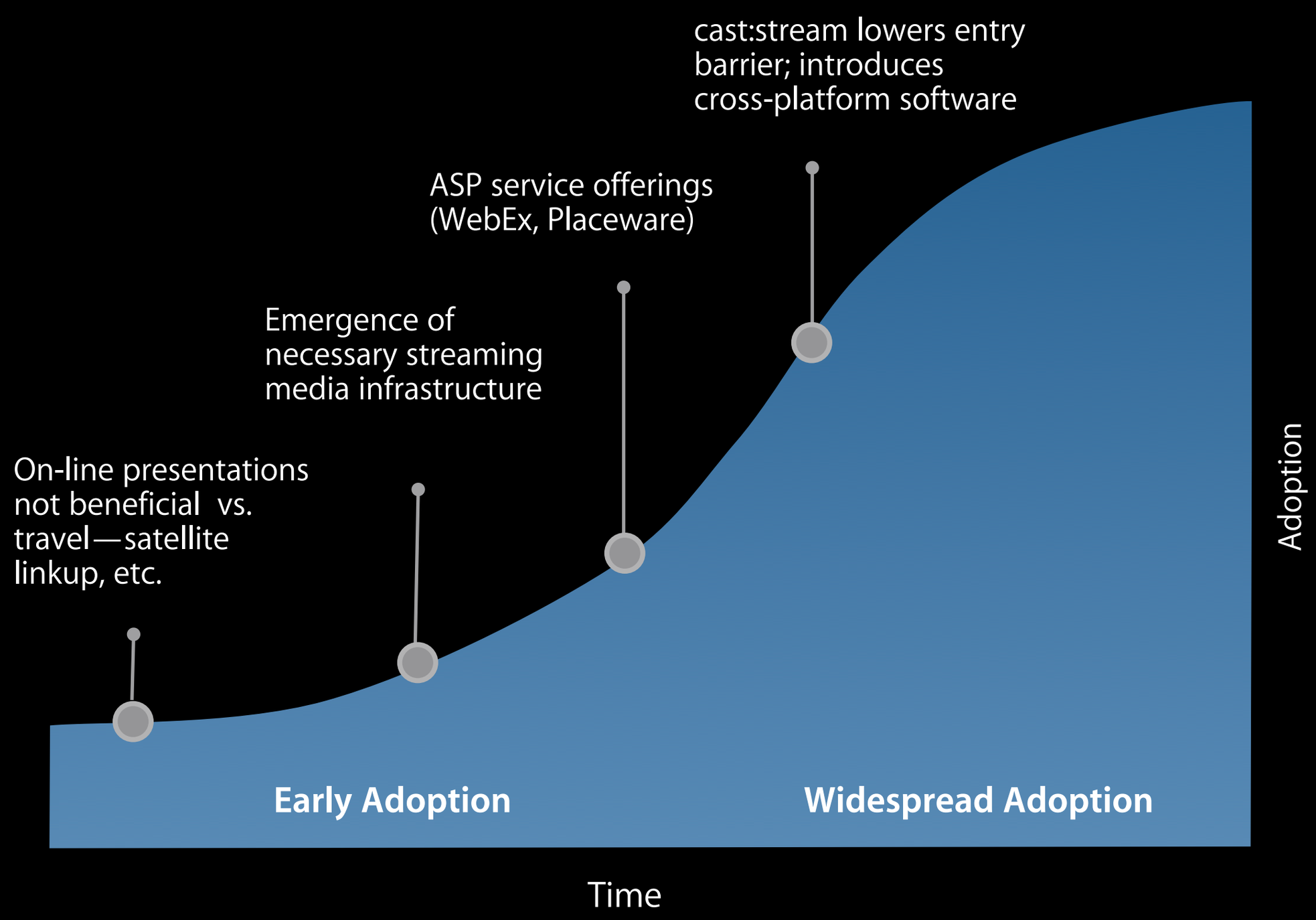
- The market opportunity
- An introduction to cast:stream enterprise
- cast:stream demo
- Cornell University case study

e-Learning Market Growth



Sources: IDC
Booz Allen Hamilton 'Re-Learning E-Learning', 2002
Washington Times, 2/18/02

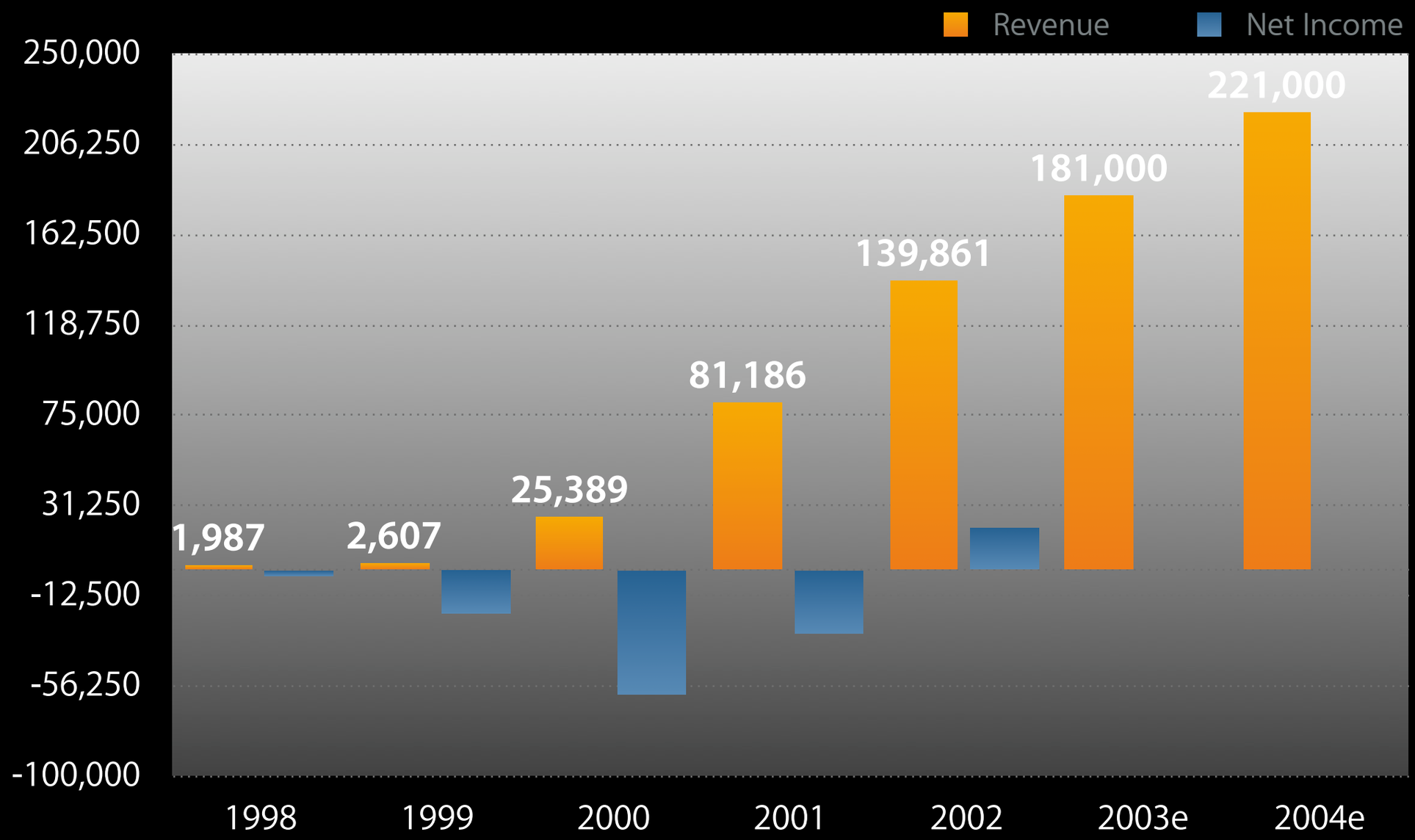
Market Opportunity



Market Historical Growth

WebEx Communication

Forbes names WebEx the fastest-growing technology company in April of 2003:



Simple value proposition: Less travel saves money and is safer.

Market Dynamics

- Market has been “validated”
- Perfect storm
  - Economy
  - Terrorism
  - SARS
- Mostly business-focused
  - ASP
  - Windows dominated
  - “Poor” media

Poised for the “Next Generation”

- Product versus ASP
  - Lower TCO
  - Single budget cycle
  - Better security
- Cross Platform
  - Inclusive
  - “Outward-facing”
- Rich media
  - Longer attention
  - Higher retention

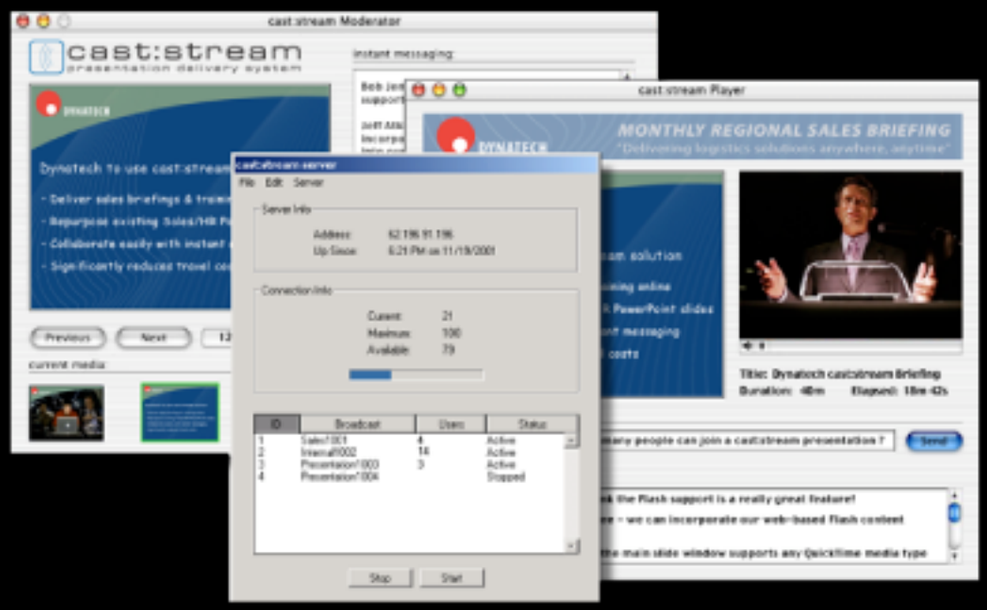
cast:stream Enterprise

- We provide cross-platform client-server software that lets businesses or schools originate, manage, and deliver via the Web audiovisual presentations with synchronized rich media.

Macworld BEST OF SHOW 2NOYOC2

Moderator

Server



Player

Chris Kawalek

CTO—Caststream, Inc.

Introduction

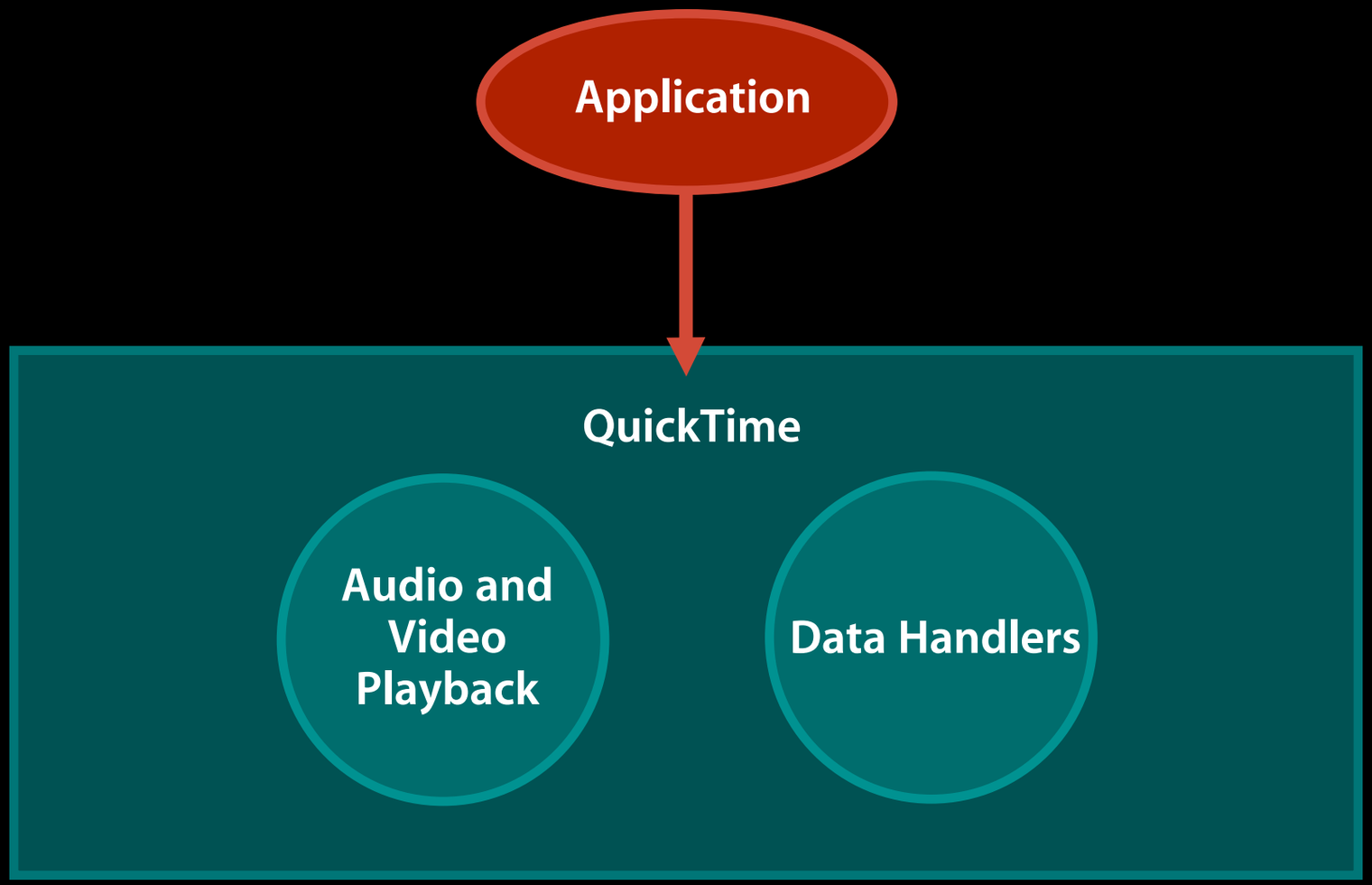
- The challenge of designing a distance learning solution
- The role of QuickTime in distance learning

What You'll Learn

- Basic goals for distance learning projects
- How QuickTime can help you meet those goals

Technology Framework

- Off-the-shelf technology used in interesting ways
- QuickTime (AV playback and data handlers)



Design Goals for Distance Learning

- Synchronize audio and video with slides
- Ability to display rich media slides
  (Flash, Progressive QuickTime, QuickTime VR, etc.)
- Both real-time and on-demand audio and video
- Easy to use
- Cross platform
  - Mac OS X
  - Mac OS 9
  - Windows 98, 2000, XP

Design Goals for Distance Learning

- Multiple markets
  - K–12
    - Lower equipment and bandwidth budget
  - Higher education
    - Great bandwidth, newer equipment
  - Corporate training
    - Good bandwidth, screen sharing
  - Corporate communications
    - Varying bandwidth, firewalls

Design Goals for Distance Learning

Other Requirements

- Chat
- Polling

Design Goals for Distance Learning

QuickTime

Display audio and video

Display Rich Media (Flash, etc.)

Live and on-demand

Cross platform

Media download

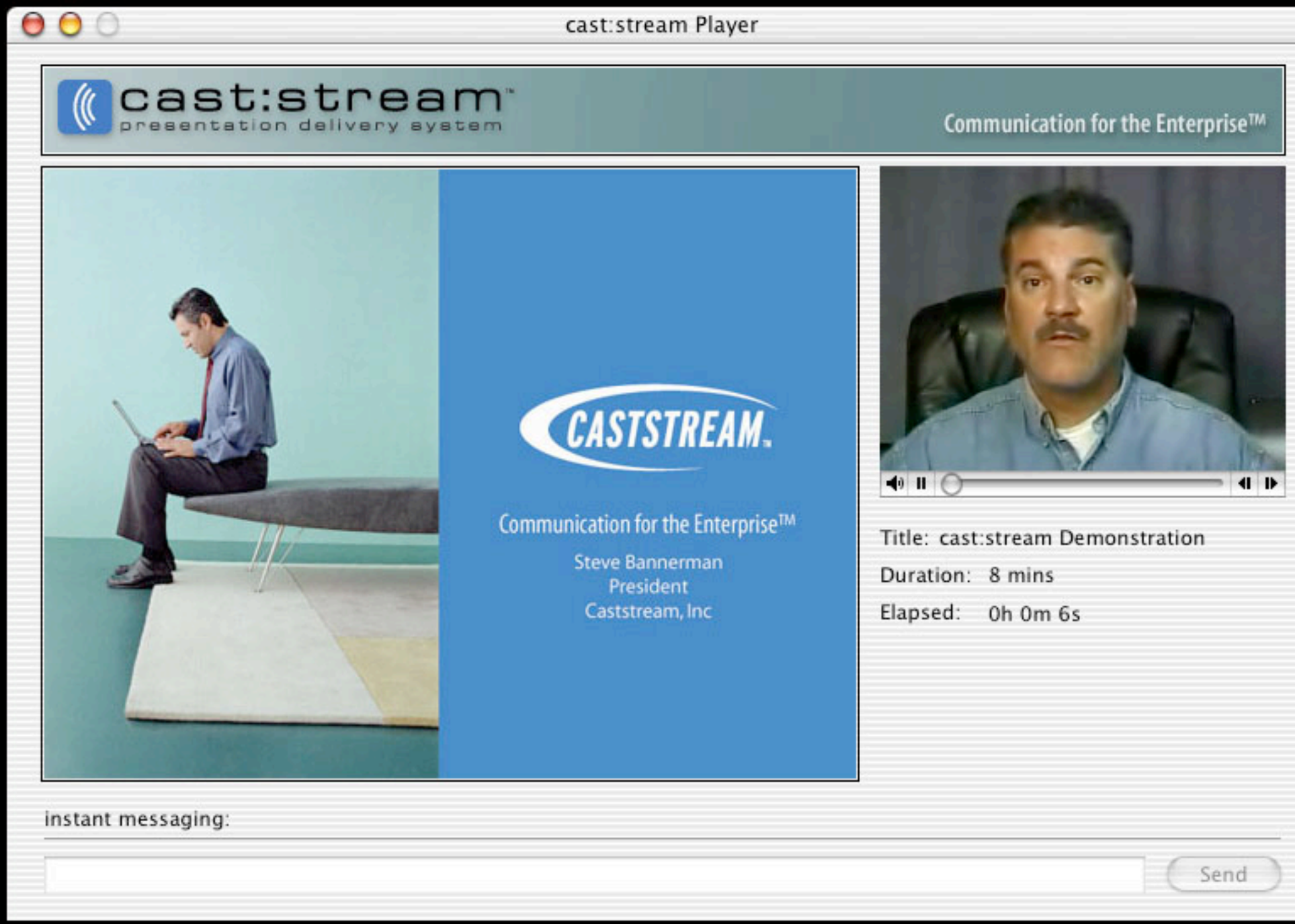
Other

Synchronization

Chat

Polling

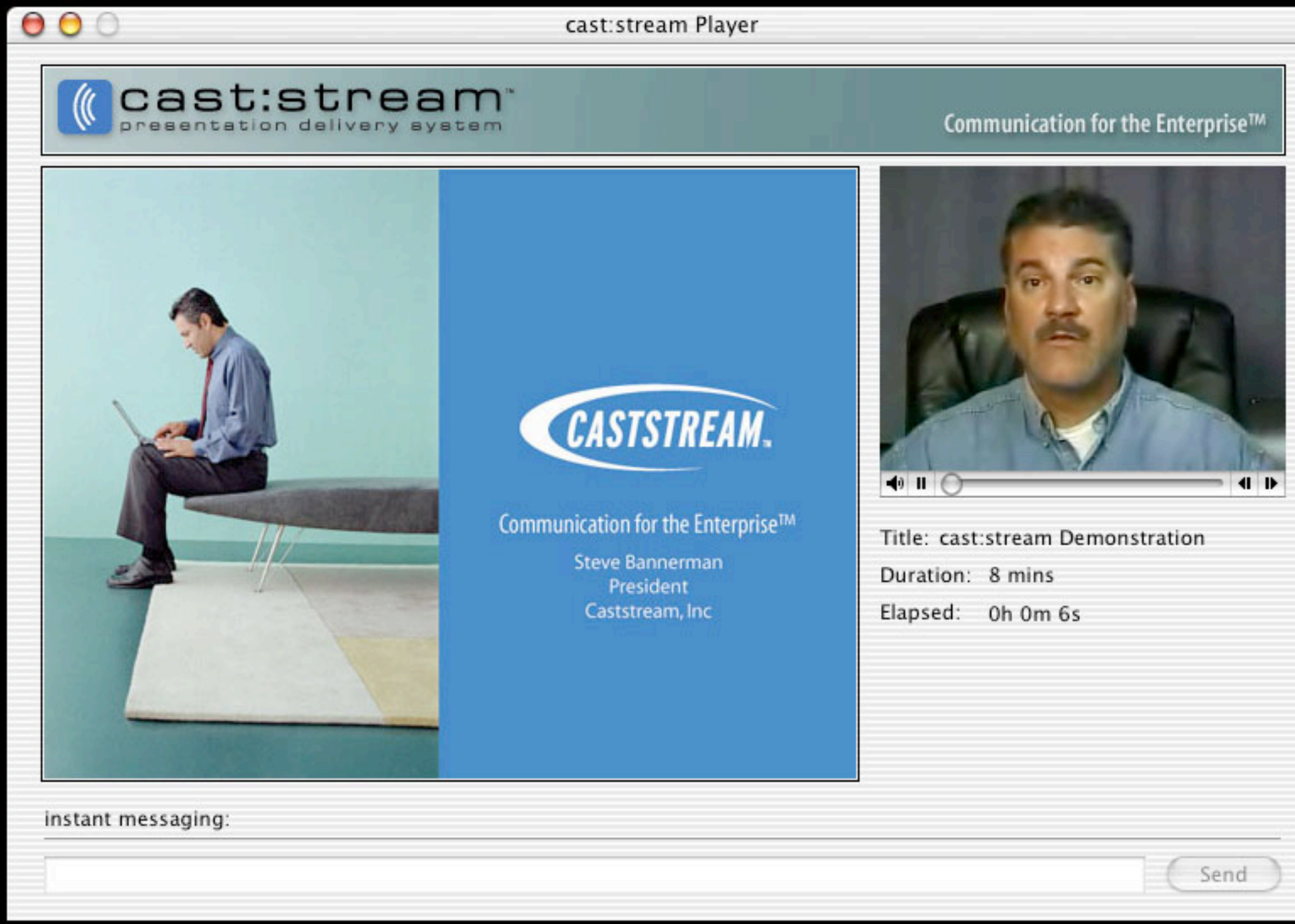
Introducing cast:stream



Introducing cast:stream

What if....

Introducing cast:stream



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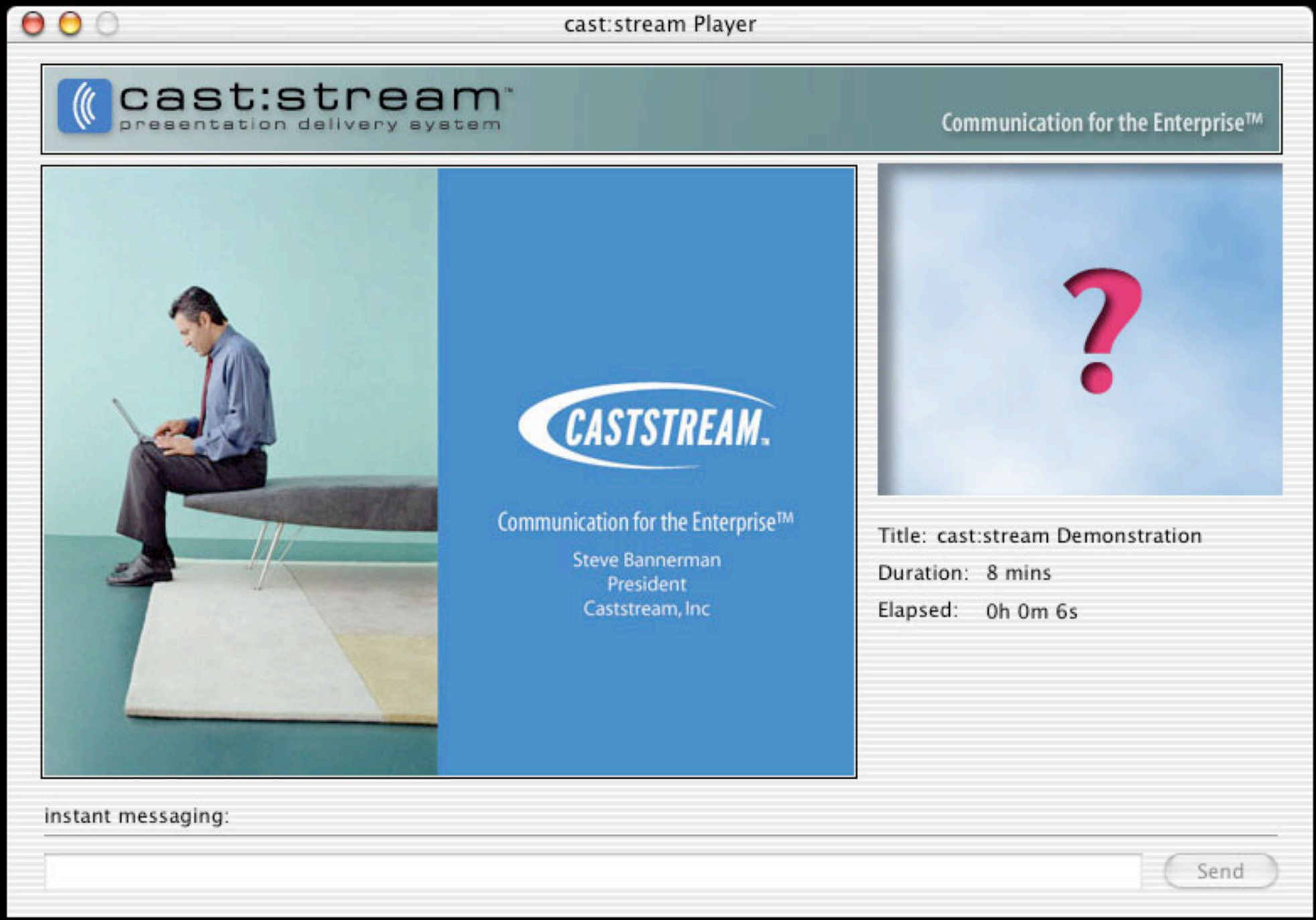
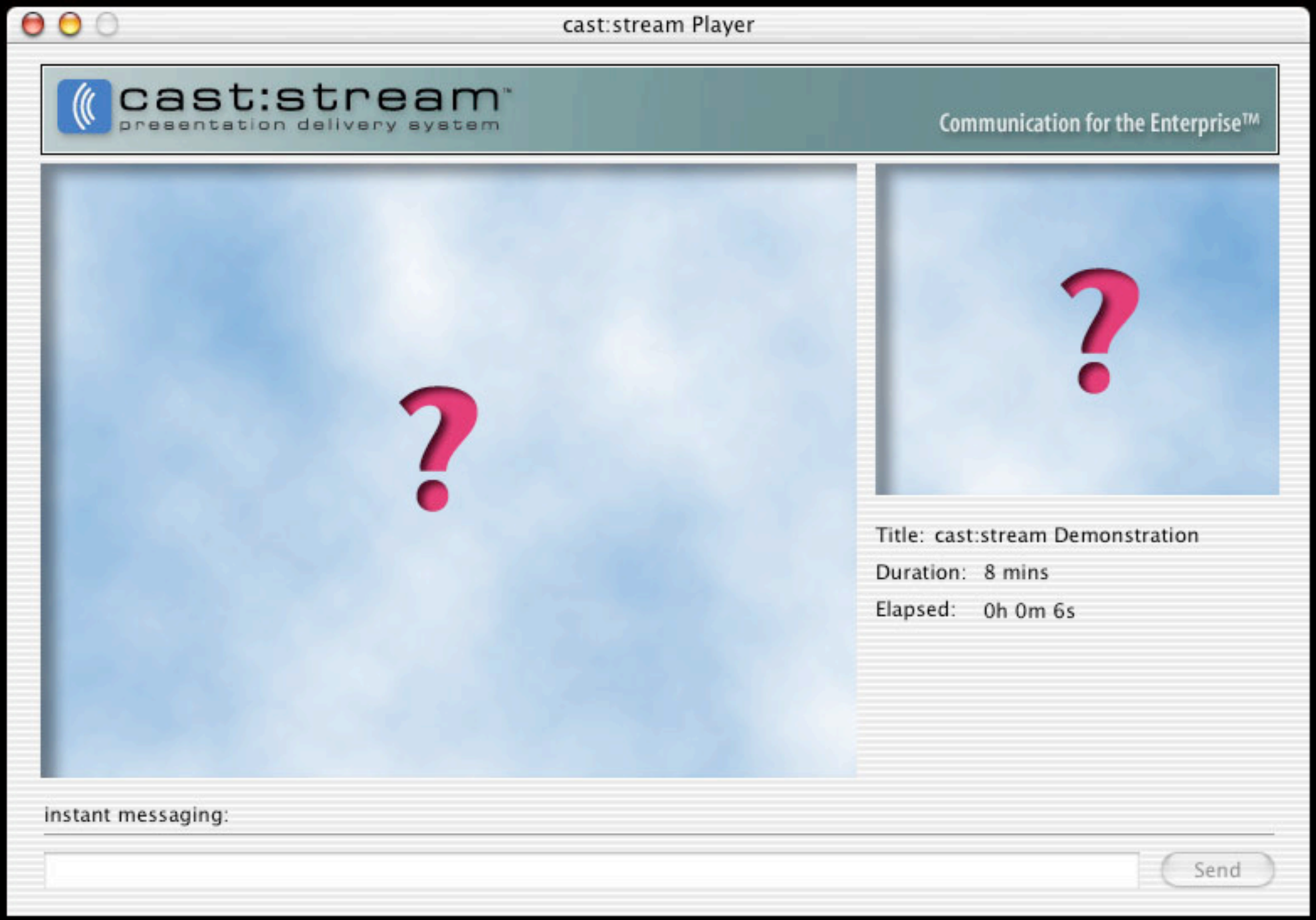


Introducing cast:stream



Introducing cast:stream

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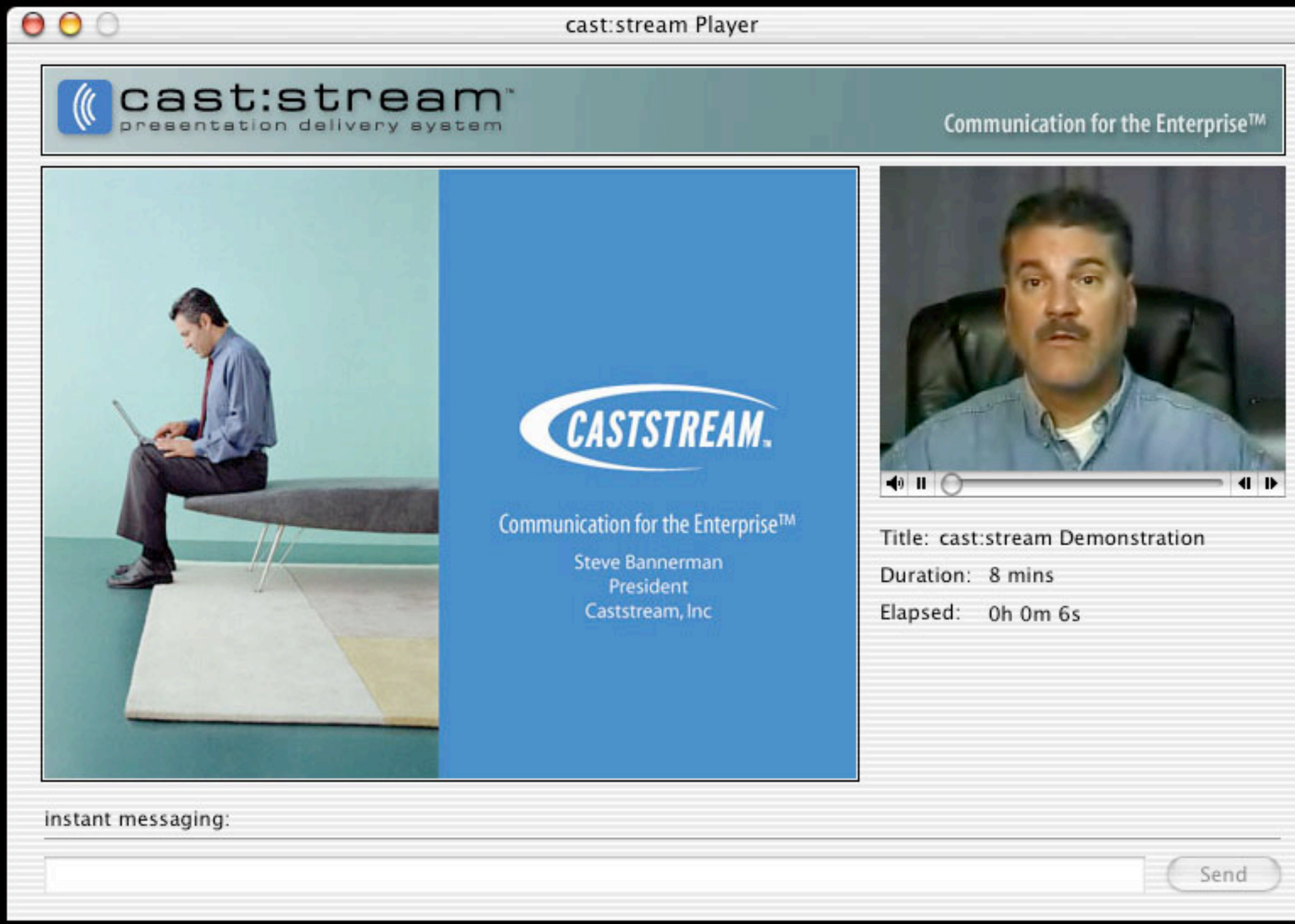


Why QuickTime?

Pros

- High-performance video architecture
- Excellent scaling
- Supports a wide variety of media types
- Well supported and marketed by Apple (new codecs)
- Cross platform
- Data handlers for media download

Why QuickTime?

Cons

- Some Windows users will need to do an install

cast:stream Video Area

QuickTime in cast:stream

Video area

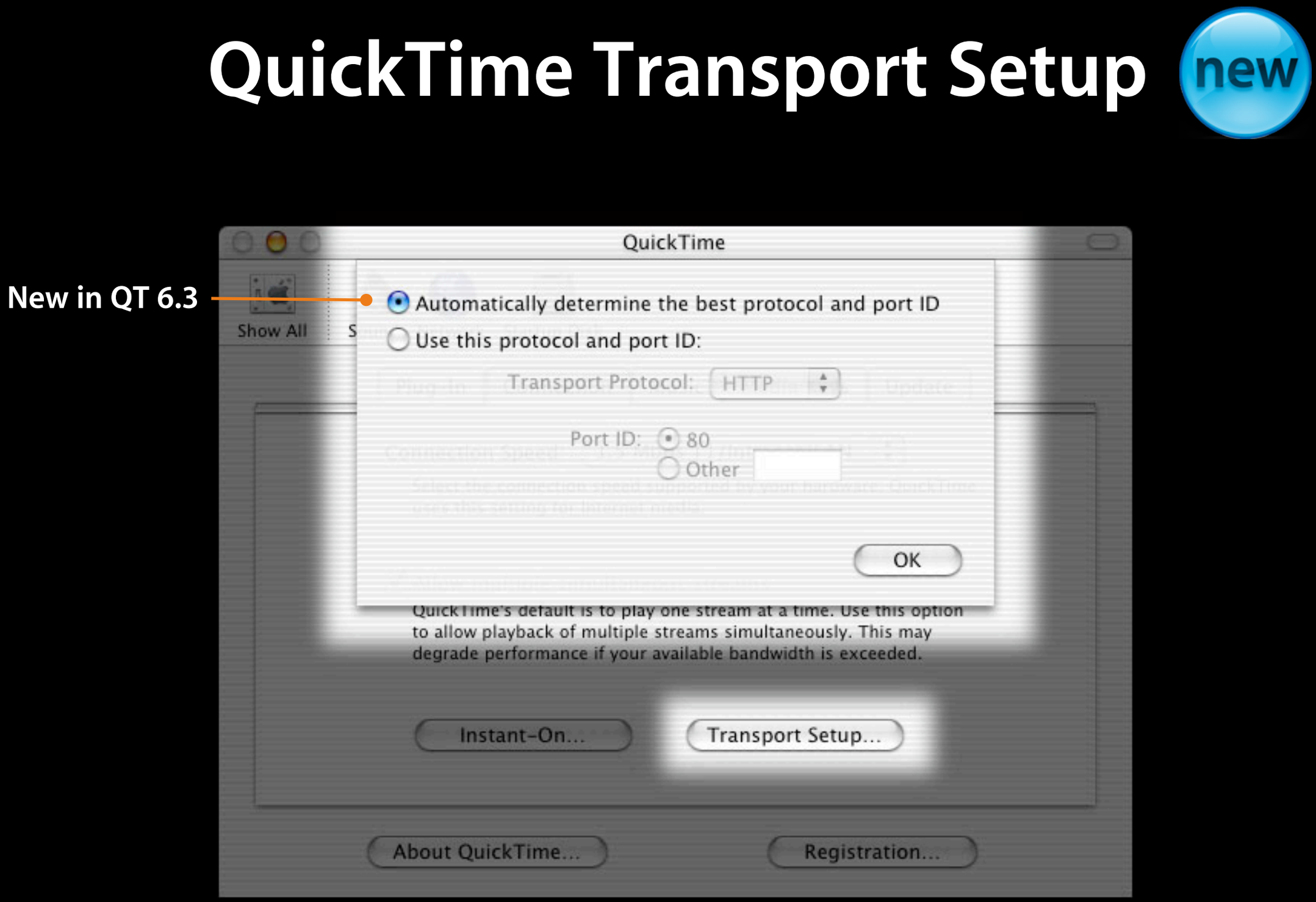
- Any movie accessible via URL
  - Ref movies
  - Multi-datarate movies
  - Audio only
  - Audio with picture track
  - Streaming (RTSP or HTTP) or progressive

QuickTime in cast:stream

Video area

- Common issues
  - Firewalls
    - Automatic transport setup in QuickTime 6.3

QuickTime Transport Setup

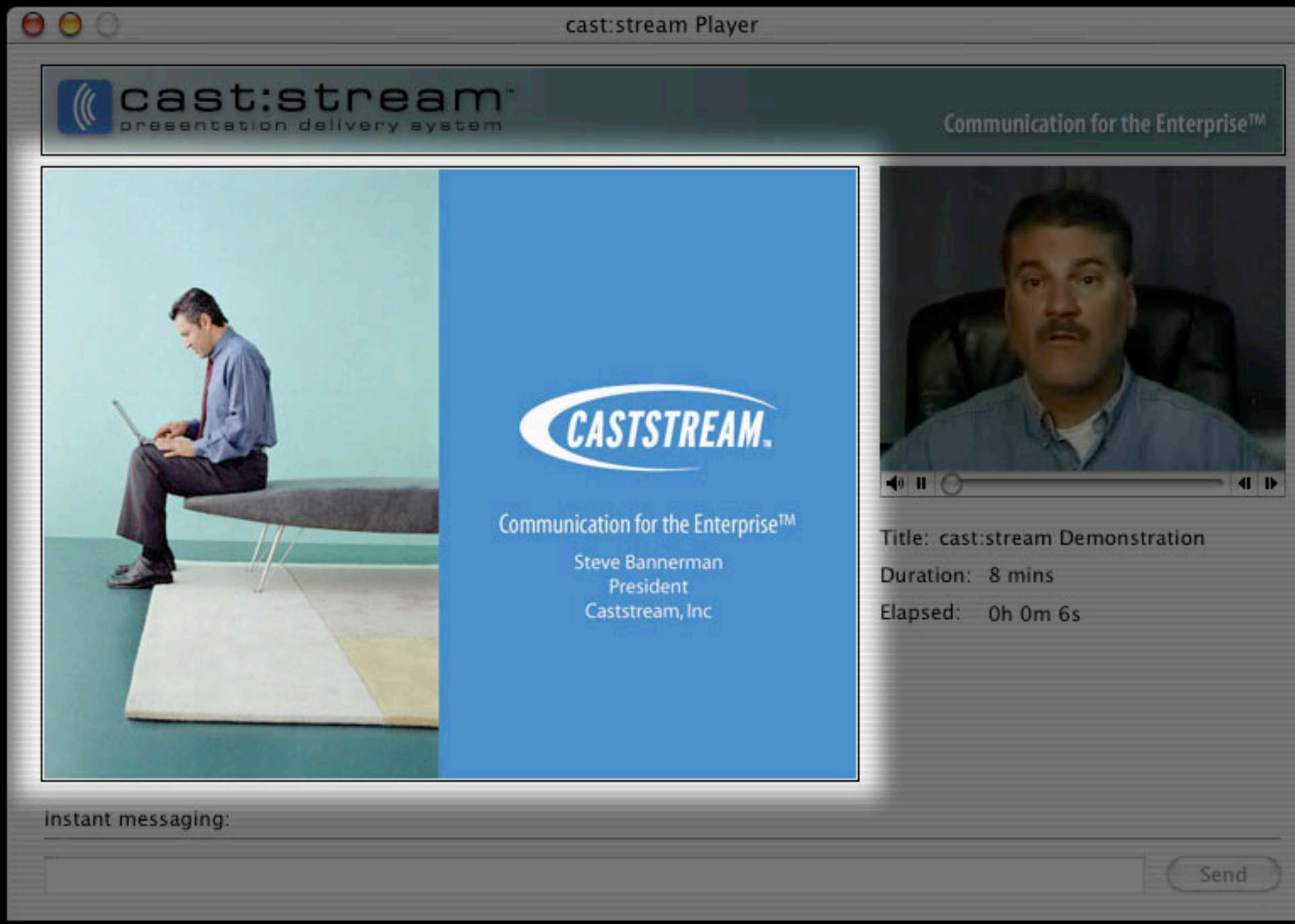


QuickTime in cast:stream

Video area

- Common issues
  - Firewalls
    - Automatic transport setup in QuickTime 6.3
  - Lack of bandwidth
    - Audio only
    - Audio with picture track
    - Multi-datarate ref movies

cast:stream Slide Area



QuickTime in cast:stream

Slide area

- Any QT compatible file accessible via URL
  - Still images (JPG, GIF, PNG, PCT, etc.)
  - Video (RTSP, progressive)
  - Specialty (QuickTime VR, Wired sprite, Flash)
  - Scale on the fly

cast:stream Banner Area

QuickTime in cast:stream

Banner area

- Any QT-compatible file accessible via URL
  - Still images (JPG, GIF, PNG, PCT, etc.)
  - Video (RTSP, progressive)
  - Specialty (QuickTime VR, Wired sprite, Flash)
  - Often used for animated GIFs (”web banners”)

QuickTime in cast:stream

Data handlers

- HTTP and FTP data handlers used for downloading slide media
- Cross platform
- Browser paradigm
- http://developer.apple.com/samplecode/Sample_Code/QuickTime/Goodies/qtfiletransfer/QTFileTransfer.c.htm

Demo

Jeff Jameson
jeff@caststream.com

http://developer.apple.com/wwdc2003/urls.html

Other Distance Learning Requirements

Slide creation

- Create slides in a variety of applications
  - Keynote
  - PowerPoint
  - Flash
  - Photoshop
  - Illustrator
  - AppleWorks
  - Any application that can produce something that QuickTime can display

Other Distance Learning Requirements

Slide creation

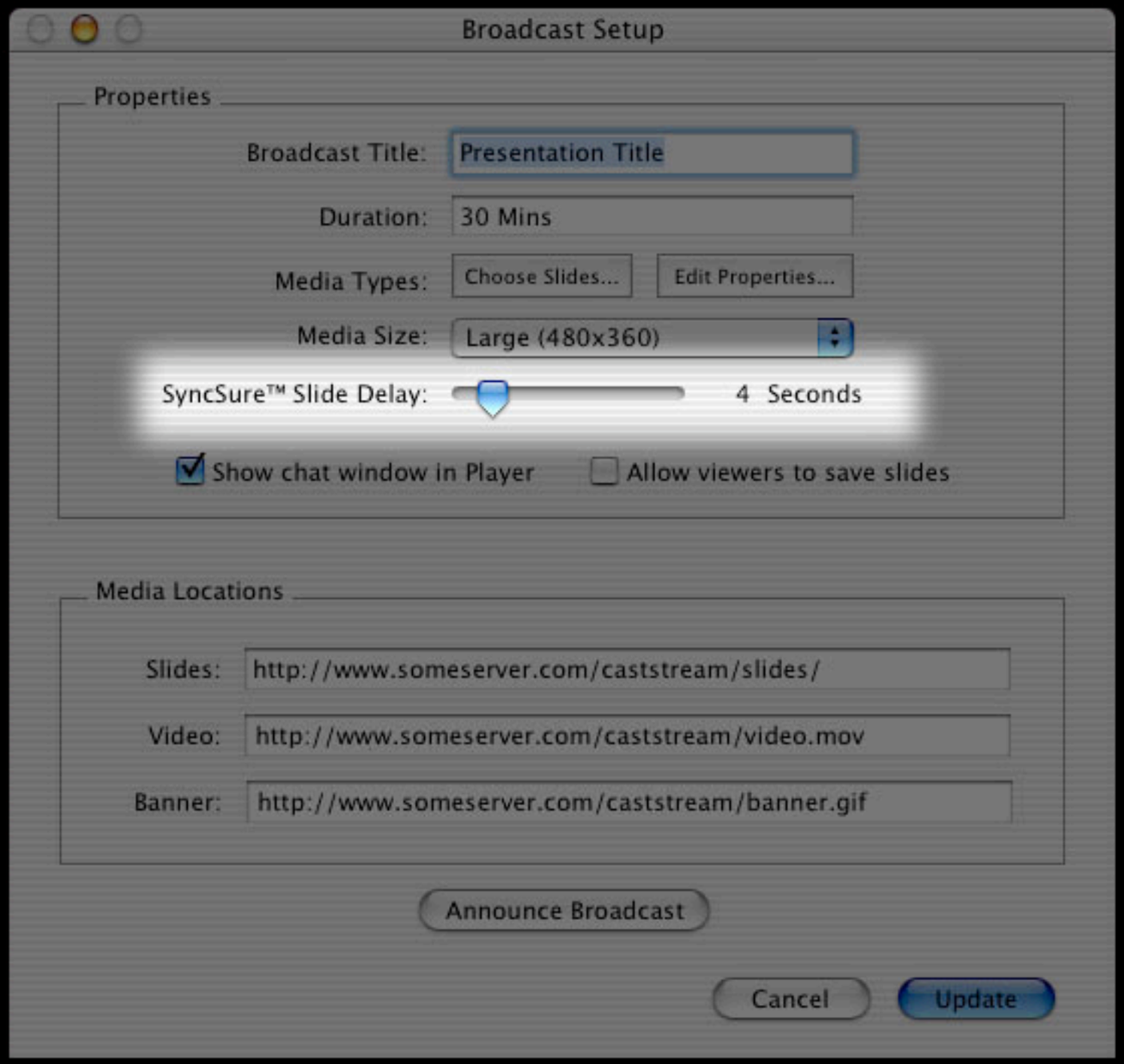
- Keynote integration
  - Export as QuickTime movie
  - Process with AppleScript and QuickTime Player Pro
  - Slides are ready for use with cast:stream

Other Distance Learning Requirements

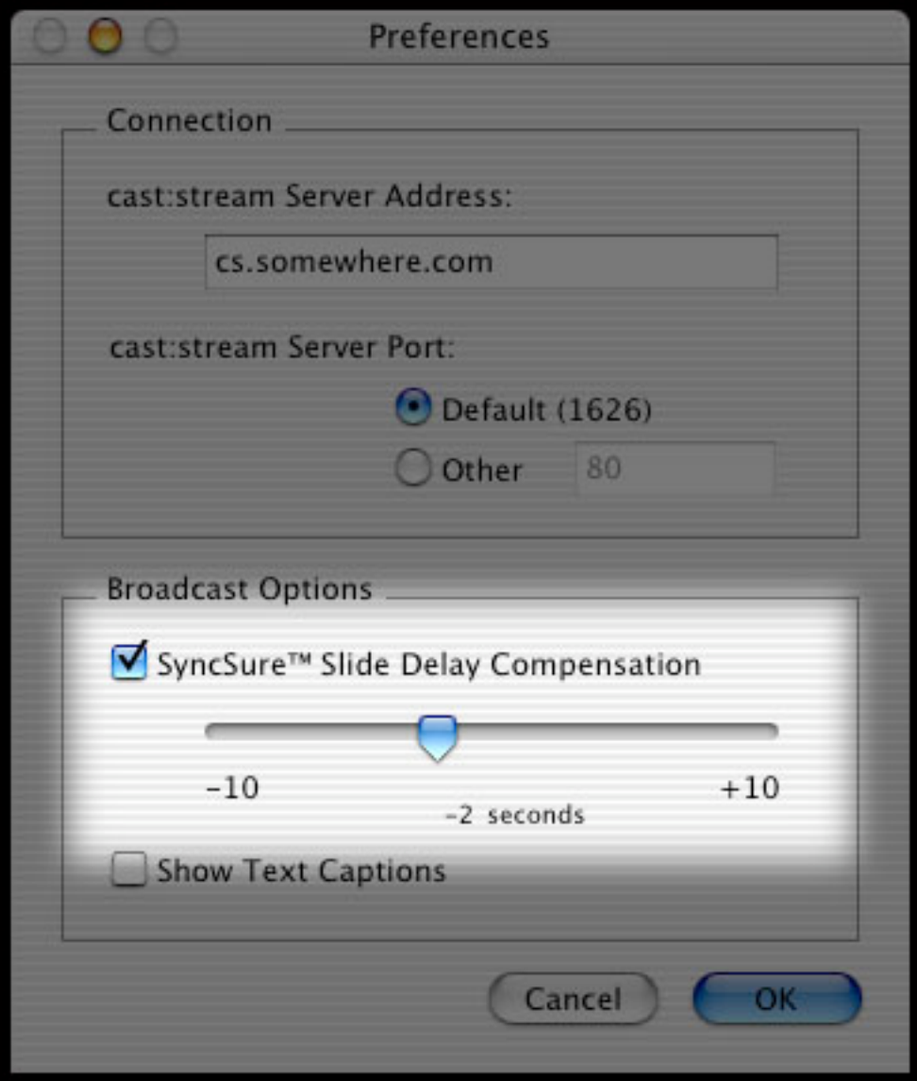
Slide synchronization

- Video delayed by live broadcaster
- SyncSure

SyncSure Broadcast Setup



SyncSure Player Setup



Other Distance Learning Requirements

Chat

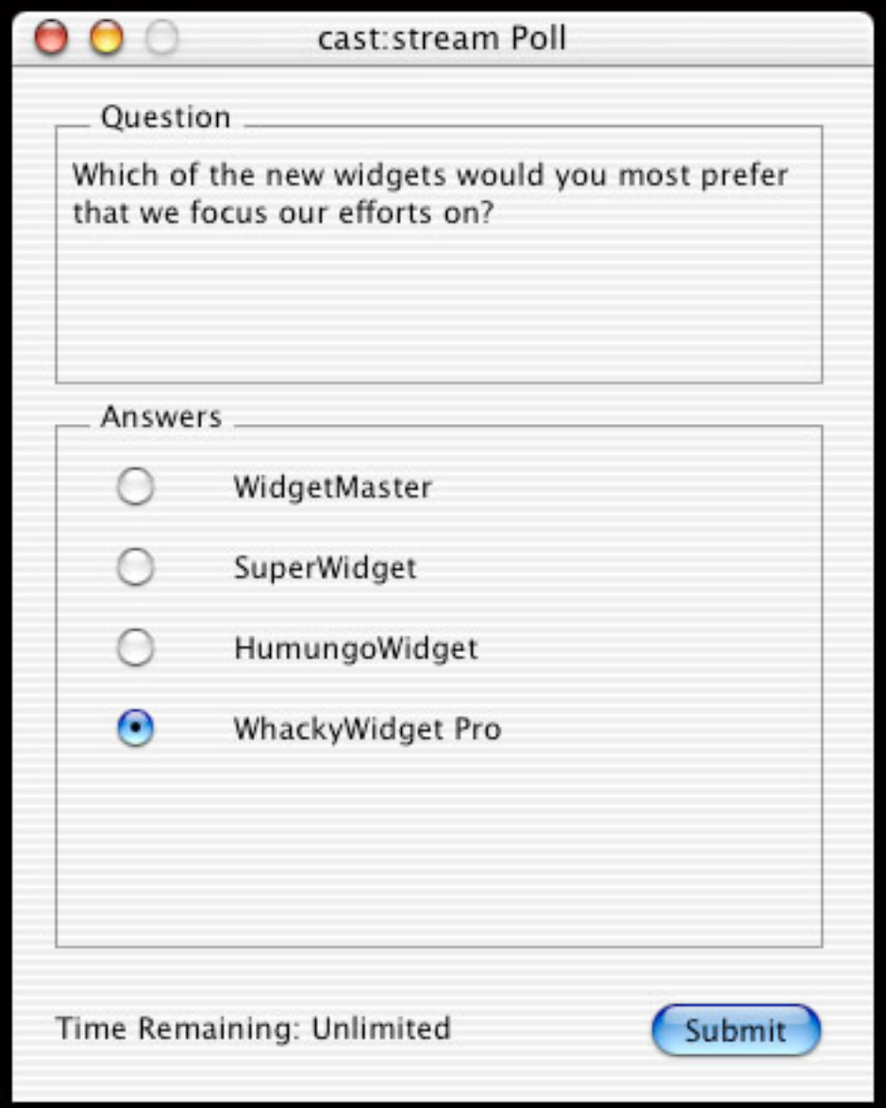
- Users need a way to communicate with…
  - The presenter or moderator
  - With each other
- Chat between users is optional
- Chat with presenter/moderator is one way
- Chat can be globally disabled per broadcast or individual users can close the chat window if it's distracting to them

Other Distance Learning Requirements

Polling

- Presenters need a way to poll the audience to…
  - Perform tests
  - Assess interest
  - Guide presentation

cast:stream Poll



Other Distance Learning Requirements

Polling

- No backend database
- Results stored directly in Moderator application
- Export as tab delimited text
- Import into Excel, Filemaker Pro, AppleWorks, learning management systems

Other Distance Learning Requirements

Cross-platform considerations

- Various markets need support for various platforms
  - QuickTime supports the vast majority of desktops
  - REALbasic allows for Carbon and Win32 compilation from a common codebase

Reference Library

Documentation

QuickTime
http://developer.apple.com/samplecode/Sample_Code/QuickTime.htm

QuickTime Data Handlers
http://developer.apple.com/techpubs/quicktime/qtdevdocs/RM/rmDataHandlerComp.htm

QuickTime Data Handler Example
http://developer.apple.com/samplecode/Sample_Code/QuickTime/Goodies/qtfiletransfer/QTFileTransfer.c.htm

AppleScript and QuickTime Player Pro
http://www.apple.com/applescript/quicktime/index.html

Dr. Steven M. Erde

Sr. Director—Office of Academic Computing
Chief Security Officer
Associate Professor of Clinical Pathology
Weill Medical College of Cornell University

Weill Medical College

- Located in NYC (main campus is in Ithaca)
- Computer Assisted Problem Based Curriculum
  - Macintosh-based since 1984!
  - New branch of Medical College has opened in Qatar
- A combined undergraduate/graduate program
  - Years 1 and 2—Cornell University undergraduate courses
  - Years 4 through 6—Weill Medical College curriculum

Problem

- Where is Qatar?
  - And how do you pronounce it?
- How do you get enough faculty to teach there?
  - Undergraduate science courses
  - Medical College courses

Possible Solutions

- Video conference
  - Great for small group meetings
  - 8 hour time difference (different weekend)
  - Not great for media rich curriculum
- Live streaming video
  - 8 hour time difference (different weekend)
  - Not great for media rich curriculum

Solution: cast:stream

- Asynchronous streaming video with synchronized multimedia
  - QuickTime talking head
  - Synchronized JPEG lecture slides
  - Synchronized video/movie clips
  - Synchronized high resolution still images
    - Microscopy, x-rays, etc.

Demonstration Lecture: Narcolepsy

- Psychology 101 from Ithaca
- Internationally famous professor
  - James Maas
  - Author of “Power Sleep”
- Largest undergraduate course at Cornell
- Wide variety of A/V content
  - Video
  - 16mm film

Demo

Glenn Bulycz
Sr. Product Manager, QuickTime
bulycz@apple.com

http://developer.apple.com/wwdc2003/urls.html

Wrap Up

Roadmap—Tuesday

	The Presidio	Pacific Heights	Haight/ Ashbury	SOMA
9:00	701 QuickTime State of the Union			
10:30			702 MPEG-4 Demystified	703 The Pro in QuickTime Pro
12:00				
2:00			704 Introduction to QuickTime Streaming	705 The Art of MPEG-4 Encoding
3:30			706 Designing a Distance Learning Solution With QuickTime	707 QuickTime Media Skins
5:00		708 QuickTime APIs Update	709 QuickTime on Campus— A Case Study	710 Preprocessing Principles

Roadmap—Wednesday

	Russian Hill	Pacific Heights	Haight/ Ashbury	SOMA
9:00	711 Audio and QuickTime		712 QuickTime for the Web	713 Introduction to QuickTime Interactivity
10:30			714 Large-Scale Webcasting: Macworld Keynote Case Study	715 QuickTime Interactivity Tools
12:00				
2:00	716 Advanced QuickTime Programming Techniques		717 3GP: Myth Versus Reality	718 AppleScript and QuickTime
3:30			719 Administering QuickTime Streaming Server	720 Content Creation for Mobile Phones: Top 10 Success Factors
5:00			721 WiFi and 3G: Let the Games Begin	722 Advanced QuickTime Interactivity

Roadmap—Thursday

	The Mission		Haight/ Ashbury	SOMA
9:00	727 QuickTime Streaming Server Programming		723 The Real Story About MPEG-4 Visual Licensing	724 What's New With QuickTime VR?
10:30			725 QuickTime and Enhanced CDs	726 Cutting-Edge Projects Using QuickTime VR
12:00				
2:00			728 Produce a Listening Party With QuickTime	729 Industrial-Strength Encoding
3:30			FF011 QuickTime Feedback Forum	
5:00				

Roadmap—Friday

	Pacific Heights	The Marina
9:00		
10:30	730 QuickTime Alternative Programming Environments	
12:00		
2:00		731 Internet Application Development: The New Frontier
3:30		
5:00		

Who to Contact

Guillermo Ortiz
QuickTime Technology Manager
quicktimeman@apple.com

http://developer.apple.com/wwdc2003/urls.html

For More Information

For More Information

Documentation

General Information
http://www.apple.com/quicktime

Developer Information
http://developer.apple.com/documentation

QuickTime Information
http://developer.apple.com/QuickTime

Do Not Miss!

Lab: QuickTime Content Creation

Meet with QuickTime content experts for daily content specific topics that are of special interest to you. Bring your own media and PowerBook. No appointment is needed—first-come, first-served.

Sacramento Room

Lab: QuickTime Development

Meet with Apple's QuickTime engineers. Each day will emphasize a specific QuickTime development topic. Bring your own code and PowerBook. No appointment is needed—first-come, first-served.

Sacramento Room

Lab Hours

Monday	12:00pm to 6:00pm
Tuesday	9:00am to 6:00pm
Wednesday	9:00am to 6:00pm
Thursday	9:00am to 4:30pm
Friday	9:00am to 6:00pm

Q&A

Glenn Bulycz
Sr. Product Manager, QuickTime
bulycz@apple.com

http://developer.apple.com/wwdc2003/urls.html

WWDC 2003

Worldwide Developers Conference